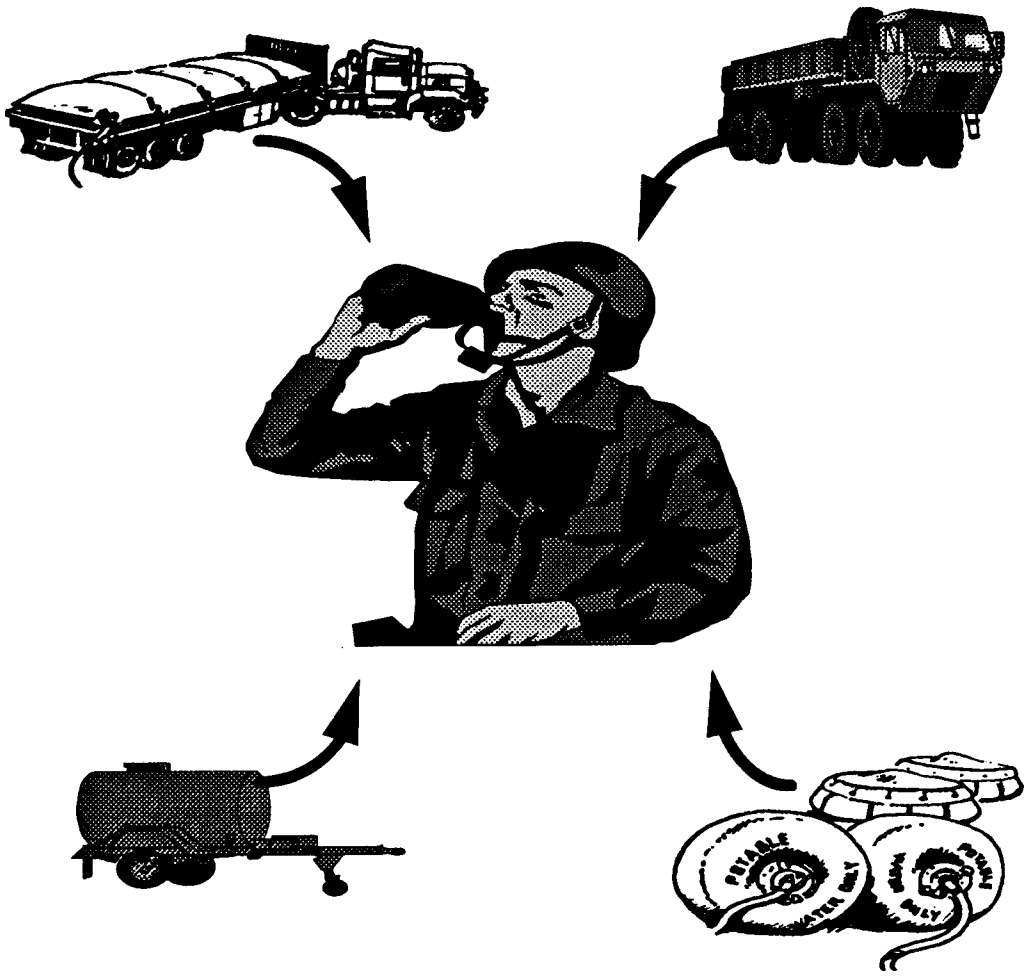
TRADOC PAMPHLET 525-32

U.S. ARMY OPERATIONS CONCEPT FOR POTABLE WATER SUPPORT



1 November 1996

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FOREWORD

The Army must be able to project lethal and survivable combat power rapidly against a variety of threats and into virtually any part of the world. Flexible, pro-active water support is required to resupply highly mobile and agile forces in future operations. Modernization of water purification and distribution equipment, improved doctrine and increased capabilities for water storage/transport will be critical to the vital mission of water supply.

The ability to provide potable water to the force is currently limited by a lack of appropriate distribution assets, and the inability of the Semitrailer Mounted Fabric Tanks (SMFT) to be transported partially full. Many units do not have adequate water storage containers to maintain sufficient water supplies. Non-expendable water resupply equipment currently in use is not adequate in situations where it cannot be recovered. Emergency water purification for small units that are separated from supply channels is not currently available.

Recent deployments highlight the need for flexible systems which will enable commanders to produce, store, and distribute water in varying quantities and forms. The increased agility and mobility of combat units will be increased by introducing the capability for unit distribution of water to maneuver units, enabling them to resupply more rapidly and efficiently without distraction from unit/individual missions. Capabilities for packaging water on the battlefield for use by individuals/ teams, small unit purification capability for squads/teams separated from normal supply channels and improved hand held purification devices will increase commanders' capabilities to project forces on the battlefield beyond current supply capabilities. Streamlining water support unit structures will likewise provide more focused and flexible support to the Force XXI Army.

Department of the Army
Headquarters, United States Army
Training and Doctrine Command
Fort Monroe, Virginia 23651-5000

1 November 1996

* TRADOC Pamphlet 525-32

Military Operations

U.S. ARMY OPERATIONS CONCEPT FOR POTABLE WATER SUPPORT

Summary. This pamphlet outlines capabilities required to provide rapid and efficient potable water resupply. It serves as the basis for developing doctrine, training, leader development, organizations, and materiel changes focused on soldier (DTLOMS) requirements.

Applicability. This pamphlet applies to all U.S. Army Training and Doctrine Command (TRADOC) installations and activities that develop DTLOMS requirements and to the full range of military operations. Its application streamlines water support structures through modernized water units for more focused and flexible support to the FXXI Army. Flexible water production capabilities in packaging will expand the commanders' ability to project forces on the battlefield. This concept supports Battlefield Distribution.

Suggested improvements. The proponent of this pamphlet is the Deputy Chief of Staff for Combat Developments. Send comments and suggested improvements on DA Form 2028 (Recommended Changes to Publications and Blank Forms) through channels to Commander, HQ TRADOC, ATTN: ATCD-BP, Fort Monroe, VA 23651-5000. Suggested improvements may also be submitted using DA Form 1045 (Army Ideas for Excellence Program (AIEP) Proposal).

Contents

* This pamphlet supersedes TRADOC Pamphlet 525-32, 12 September 1983.

Chapter 1
Introduction

1-1. Purpose. This pamphlet describes the capabilities required to produce and distribute potable water in the 21st Century. It will describe changes needed to bring water more efficiently and quickly to soldiers in the field in the quantities required to sustain combat operations across the full range of military operations and environmental conditions.

1-2. References. Required and related publications are listed in appendix A.

1-3. Explanation of abbreviations and terms. Abbreviations and special terms used in this pamphlet are explained in the glossary.

Chapter 2
General

2-1. Why the concept is needed.

a. Water is one of the Army's most critical logistics resources, particularly in arid environments. Recent operational deployments, as well as Operation Desert Storm, have highlighted the central role water production and distribution play in military operations while highlighting potential material and organizational changes that could significantly improve service to the ultimate customer, the soldier.

b. The focus of developing a Force XXI Army includes making combat units faster, more flexible, with fewer organic logistics assets. Providing materiel directly to using units as quickly as possible is a major goal of battlefield distribution and Force XXI. This increased agility and mobility of combat units will be aided by instituting unit distribution of water to maneuver units. Delivering water to units will enable units to receive water resupply more rapidly and efficiently without distraction from unit/individual missions. Current materiel is inadequate to accomplish this change. For example, the Semi-trailer Mounted Fabric Tank (SMFT) cannot be transported partially full and has no off-road capability.

c. The current water support structure incorporates direct support (DS) and general support (GS) units at various levels to provide water production, storage, and distribution. The primary mission of GS water assets are for arid environments. The DS/GS structure has created overlapping production capability in the DS supply companies and the GS water teams and detachments. Force structure adjustments may be needed to provide a more lean and responsive water support structure. Modular water units, capable of deploying in increments sized to support the force densities assigned, are needed to provide efficient, effective water support.

d. This concept will outline required capabilities and potential avenues of approach for supporting the Force XXI Army, to include introducing unit distribution to maneuver units on the battlefield, modular force structure changes to effectively realign water force structure, a capability for limited packaged water production on the battlefield, improved bulk water transportation assets in echelons above division (EAD), and water purification capabilities for small, isolated units.

2-2. Threat. Equipment and personnel required to provide water support may be targets of opportunity for threat forces and are vulnerable to the entire spectrum of threat attack means. The most devastating damage to water support operations would occur from the effects of nuclear, biological, and chemical contamination and/or sabotage of the water source or the water supply at any point.

2-3. Operational content.

a. Force XXI. The Force XXI Army is being organized around information to be able to mount, recover, and conduct operations simultaneously, and perform its core tasks unencumbered from non-critical combat functions. Providing potable water in sufficient quantities and proximity to troops aids these missions and eliminates distractions.

b. Battlefield distribution. Water distribution as described in this concept supports the Battlefield Distribution concept currently being developed. Battlefield Distribution is defined as "a holistic concept of information exchanges, management procedures, functional designs and re-engineered operational processes which enable U.S. forces to properly request, receive, redirect, track, distribute, control and retrograde within a single distribution system." The main characteristics include utilizing a single distribution manager, a hub and spoke distribution system, reducing layered supplies and taking advantage of modular designs. Integrated communications and tracking systems are critical. Water is the only commodity that we produce on the battlefield and is by nature a unique system. Interfacing with the hub and spoke distribution

system whenever possible will maximize distribution assets and speed delivery.

2-4. Limitations.

a. This concept is limited to potable water support in a field environment. QM units maintain and operate a potable only water system for improved efficiency and to minimize health hazards. Non-potable water resupply is the responsibility of the user (i.e., construction, decontamination, etc.), and is explained in detail in paragraph 3-7.

b. Unit distribution described in this concept is focused primarily on maneuver battalions and the combat support units that maneuver with them.

c. Water source detection, water quality and testing as well as waste water removal are areas obviously related to potable water production and distribution but do not fall under Quartermaster proponency. Concepts relating to these areas are addressed respectively by the Engineer and Medical Service proponencies.

Chapter 3
Concept

3-1. Overview.

a. Force projection logistics requires mobile and flexible units to support varying scenarios and requirements. Water support must be structured to enable modular deployment capability with limited redundancy. Combat forces operating on the fast paced modern battlefield will require more responsive water distribution methods and capabilities for emergency water purification and resupply. Force XXI Water Support will provide units with the responsive system they require to win on the modern battlefield.

b. Provision of water requires the coordinated effort of a variety of contributors. QM DS water support elements and QM water supply battalions with their assigned GS water supply companies, tactical water distribution teams, and water purification detachments and teams provide potable water production and distribution capabilities. The Theater Army commander, or highest level commander for the operation establishes priorities and allocation procedures.

3-2. DOD Executive Agency. There will be no change in the support currently being provided to other services. The Secretary of the Army is the Department of Defense Executive Agent for joint land-based water resources management. As such, the Army will be prepared to provide GS backup capability, if needed, to support all deployed U.S. Forces. In areas of operation where the Army is not the predominant service, backup GS will be provided by that service determined by the Joint Commander to be the predominant service. Involvement in joint or combined operations requires increased planning and coordination. Joint interoperability of equipment and doctrine must be considered at all stages of planning.

3-3. Branch responsibilities.

a. Engineer units. Engineer units locate and develop water resources; provide construction support necessary to establish water well sites; construct, maintain and operate permanent, semi-permanent and non-tactical water utility systems in the theater of operations. This includes enemy prisoner of war, refugee, displaced civilians and other humanitarian relief effort base camps. Engineer assets also control all contaminated run-off water (to include “black” and “gray” water). Working in conjunction with mission planners and logistics commanders, raw water detection and drilling requirements will be developed in support of operational requirements. Equipment and personnel requirements for units assigned these missions are the responsibility of the Engineer School.

b. Medical units. The Theater Surgeon’s office, in conjunction with preventative medicine units, monitors preventive medicine water inspection programs, defines degrees of water treatment required, establishes command disinfectant residual policy and approves treated water for consumption. Preventive medicine specialists approve water sources, inspect water points, inspect water containers, analyze treated water to ensure water quality standards are met, and assist units in water source reconnaissance. When appropriate medical authorities are not available in the theater of operations for potability certification of water supplies, the senior water treatment specialist will certify potability. The AMEDD Center and School is responsible for all concepts and requirements documents pertaining to future developments in these areas.

c. EAC/Corps transportation. In areas and regions where GS water supplies are required, EAC/Corps transportation truck companies are responsible for line haul transportation of bulk potable water using the SMFT, hard-wall tankers, or other equipment assigned. Under battlefield distribution, transportation assets will operate a hub and spoke system of distribution terminals. Water production sites in the Corps and EAC

areas will be connected to the transportation system through the nearest geographic distribution terminal. Designated assets will transport bulk water from the production/storage site to a distribution terminal where it will link with other supplies designated for delivery to that specific location. Materiel managers at each level, with visibility and control of supply and transportation assets, will ensure adequate transportation is available for required bulk water deliveries and coordinate convoys to forward battlefield locations.

3-4. Echelons above division (EAD)/theater level.

a. Water support for units located in the EAD/Theater is currently provided on an area basis by nondivisional supply and service companies. These units provide water purification and storage at water supply points using approved water sources. Most units served by the supply companies will obtain resupply through supply point distribution, traveling to the water storage site or water point to fill organic water storage equipment. Some major users such as hospitals require unit distribution. This will be accomplished using SMFTs, 5,000 gallon tankers currently in the Army inventory, and future bulk transport capable equipment.

b. Current GS water supply elements have area support missions to provide water in areas where direct support water systems are not capable of providing enough water supply. This applies primarily to arid environments. When GS support operations are required, purified water will continue to be introduced into the water distribution system from purification points located on and off shore. Depending upon the location of the available water sources, water enters the system through the base terminal storage facility and is distributed to other terminals as far forward as possible using Tactical Water Distribution Systems (TWDS), SMFTs, hardwall tankers or other equipment as required.

c. Effective future water requirements will require redesign of EAD water assets. Modular units, designed with elements that are interchangeable, expandable, and tailorable to changing requirements, would provide a means of rapidly identifying, mobilizing and deploying doctrinally sound, sustainable, and fully mission-capable elements/organizations. Modularly designed water support units, able to rapidly deploy fully mission capable elements would make the water structure more responsive to both combat and non-combat operations. Streamlining the supply company (DS), arid augmentation water teams and water detachments, into one single unit, would eliminate redundant production capability and increase mobility. Integrating the capabilities into a DS/GS modular unit that could deploy as needed while still maintaining a DS role in non-arid environments and training would more fully utilize these assets. As a theater matures and water production and/or storage requirements increase, additional modules can be added to meet requirements.

d. Theater level water planning is often disadvantaged by the lack of a water planning cell at the theater level(POL Group). POL planners or others often substitute as water planners. The addition of a 77W water planner to theater staffs would aid in the in-theater planning and execution of all water support operations. Corps level support battalions and groups likewise require a 77W water planner.

3-5. Division level.

a. Water production and storage is performed by divisional direct support elements, augmented by GS augmentation teams in arid environments. Water is received from EAD storage facilities via line haul transportation as required when local water sources are unavailable.

b. The Force XXI Division will be fast-paced and mobile. In order to maintain speed and reduce distractions to divisional combat assets associated with having to travel to the BSA or farther to refill water buffalos, support units must be capable of conducting unit distribution of water to combat units. Current bulk water transportation equipment (SMFT) cannot conduct off-road operations. More critical, however, is the fact that SMFTs cannot be transported partially full. This precludes their use for unit distribution. The existing hardwall tankers were purchased for line haul requirements and have no off-road capability. An organic capability, such as a hardwall tanker, is required which can deliver water to multiple locations on the battlefield over unimproved roads. These delivery assets would conduct delivery runs several times a day as required from the nearest water supply point to maneuver unit's combat trains and return. An organic water delivery capability will eliminate the current requirement maneuver units face to send unit personnel, often more than once a day, to the Brigade Support Area or beyond for water replenishment.

c. Airborne and air assault units will continue to use the FAWPSS as the primary delivery mechanism for water to front line units. This equipment enables these units to conduct unit distribution of water and maintain mobility.

3-6. Unit level.

a. Combat brigades in all divisions need the capability to provide unit distribution of water to the combat units and the combat support units which maneuver with them. Water will be delivered from water points to company trains, to LOGPACs and/or LRPs located in the vicinity of consuming units. Limited unit distribution for hospitals and other major EAD potable water users will be provided by Quartermaster and Transportation units, regardless of battlefield location. All other units, to include divisional Combat Service Support units, will utilize supply point distribution. LRPs may be used to support highly mobile units and units passing through an area. Equipment capable of making multiple deliveries in forward locations is needed to realize unit distribution.

b. Special situations exist for unique units who conduct operations separated from regular water resupply channels. Units, such as Special Operations Forces, cannot always be resupplied through traditional methods. A need exists for the capability to provide potable water resupply during rapid tactical movement, independent operations, or while otherwise separated from regular supply channels.

(1) The capability to purify quantities of water sufficient for small units with lightweight, mobile equipment is required to expand the range of Special Forces and other similar units when traditional resupply methods cannot be employed.

(2) The capability to package purified water on the battlefield for support of units isolated from water supply assets or in emergency situations is required to allow flexibility in contingency operations or other unique situations. This capability will reduce the need for soldiers in isolated units to account for and transport empty water containers. Expendable, yet sturdy water containers made of light-weight material would provide an expendable means of water supply to enhance the current water distribution system.

(3) Improved methods for individual, hand-held water purification are required. This capability will allow individual soldiers and teams a means of purifying water when thy cannot be resupplied through normal channels. Available methods already include iodine tablets and chlorofloc tablets; however, improved technology permits cleaner and more palatable water.

3-7. Non-potable water requirements.

a. As stated, this concept is limited to potable water support in a field environment. QM units maintain and operate a potable only water system for improved efficiency and to minimize health hazards. Non-potable water supplies and non-potable water resupply is the responsibility of the user(i.e., construction, decontamination, etc.).

b. In arid environments, due to the limited amounts of freshwater sources, all water requirements (potable and non-potable) will be produced by QM water purification units. Current arid environment planning factors include non-potable uses.

c. In all environments (to include arid), non-potable water resupply (through supply point distribution or by locating near a fresh water source) remains the responsibility of the user. The equipment used to store and distribute non-potable water in an other-than-arid environment (temperate, tropical, and arctic) is the same equipment the user will require to store and distribute their non-potable water in an arid environment.

d. Non-potable water is still required by various units. Although potable water is often used for these requirements, engineer construction and fire fighting, ordnance and aviation maintenance, chemical decontamination and Quartermaster laundry, bath, mortuary affairs, and others can use varying amounts of non-potable water when available. These units will normally locate near a fresh water source, when possible. Non-potable water users must examine their respective Table of Organization and Equipment (TOE) to assess whether additional storage and/or distribution can be made using 55 gallon drums, pillow tanks, 250 gallon drums, FAWPSS, SMFTs, and other existing systems. If, due to existing conditions or requirements, potable water is required to support these activities, QM units will continue to provide potable water for these requirements.

e. Consumer organizations will have as organic equipment sufficient water transportation and storage facilities to meet the non-potable water requirements of their assigned personnel. Standard items of equipment will be included in the TOEs of those units having predictable requirements for raw water needed to accomplish primary missions.

3-8. Future operational capabilities (FOC).

a. Deployability. Modular water units are needed that can be deployed to meet varying mission requirements and force densities. Force structure redesign would identify the most efficient layering of water production capabilities and match battlefield requirements with unit capabilities.

b. Distribution.

(1) A capability is required to transport and deliver bulk water to unit level trains in off road conditions throughout the maneuver brigade area. Unlike the SMFT, the required system must be capable of deliveries to multiple locations during a single delivery run. Emerging technologies such as the Palletized Load System (PLS) and Family of Medium Tactical Vehicles (FMTV) should be examined for possible applications in satisfying this requirement.

(2) A capability to package purified water on the battlefield for use during tactical emergencies and in resupplying isolated units removed from the supply train would give ground commanders flexibility in critical situations. Expendable, yet sturdy water containers made of light-weight materials would provide an expendable means of water resupply to enhance the current water distribution system.

(3) Transport. A capability to distribute large quantities of potable water in a single lift is required. Today a limited number of 5,000 gallon hardwall tankers are in the Army inventory. These filled an emergency contingency requirement. The demands for a bulk transport capability have continued to increase as the Army supports numerous contingency operations. Improvements in bulk transport initiatives will assist the Army in meeting present and future mission requirements.

c. Purification. Lightweight, portable water purification equipment should be developed which can provide quantities of potable water sufficient to sustain small units while isolated from normal supply channels. A requirement also exists for individual, hand held water purification assets for teams and individuals operating separated from the normal resupply system.

d. Environmental considerations. Methods for protecting water storage and distribution equipment from damage caused by freezing should be developed for all future equipment. Capabilities are also required for cooling water in hot areas. Cooling the water encourages soldiers to drink sufficient quantities of water required to prevent dehydration and heat injuries.

e. Storage. The need exists for greater water storage capabilities at the company level. The limited capacity of the 400 gallon water trailer forces units to make multiple trips to water points daily. Unit distribution would alleviate the travel requirement and save time, but increased storage capacity would assist commanders in supporting troop requirements and maintaining health and welfare requirements. This could be accomplished through a combination of CTA water storage equipment currently available and increased water trailer capacity.

f. Automation. The Army requires an automated tool to determine water requirements and the associated unit strengths to meet mission needs. Such a tool will aid water planners in more accurately and efficiently planning operations and adjusting to changing mission requirements.

Chapter 4
Implications

4-1. Doctrine.

a. An overarching doctrinal manual should be written encompassing all aspects of water and water usage. Several proponents, to include Engineers, Medical and Quartermaster share responsibilities for aspects of water. These include raw water detection, potable water production, non-potable water, and waste water.

b. The following doctrinal publications should be revised based on this concept:

(1) AR 700-136, Tactical Land Based Water Resources Management in Contingency Operations.

(2) FM 10-1, Quartermaster Principles.

(3) FM 10-27, General Supply in Theaters of Operations.

(4) FM 10-27-1, Tactics, Techniques, and Procedures for Quartermaster General Support Supply Operations.

(5) FM 10-27-2, Tactics, Techniques, and Procedures for Quartermaster Direct Support Supply and Field Service Operations.

(6) FM 10-27-3, Tactics, Techniques, and Procedures for Quartermaster Headquarters Operations.

(7) FM 10-52, Water Supply in Theaters of Operation.

(8) FM 10-52-1, Water Supply Point Equipment and Operations.

(9) FM 10-115, Quartermaster Water Units

(10) FM 54-23, Materiel Management Center, Corps Support Command.

(11) FM 54-30, Corps Support Groups.

(12) FM 55-10, Movement Control in a Theater of Operations.

(13) FM 63-1, Support Battalions and Squadrons, Separate Brigades, and Armored Cavalry Regiments.

(14) FM 63-2, Division Support Command, Armored, Infantry, and Mechanized Infantry Divisions.

(15) FM 63-2-1, Division Support Command, Light Infantry Airborne, and Air Assault Divisions.

(16) FM 63-3, Corps Support Command

(17) FM 63-4, Combat Service Support Operations-Theater Army Area Command.

(18) FM 63-20, Forward Support Battalion.

(19) FM 63-21, Main Support Battalion.

(20) FM 100-10, Combat Service Support.

(21) FM 100-16, Army Operational Support.

(22) TB MED 577, Occupational and Environmental Health: Sanitary Control and Surveillance of Field Water Supplies.

c. All Training and Doctrine Command (TRADOC) and Army proponents should review and update doctrinal publications as they pertain to this concept.

4-2. Training.

a. Water curricula will be revised based on this concept. Training to address the concept and new equipment will be incorporated into water curricula. Where required, on-site training will be provided to units in the fielding process.

b. All TRADOC and Army proponents must review and update training publications (i.e. ARTEPs/MTPs, Course POIs, training circulars) as they pertain to this concept.

c. Unit training in all branches of the Army (active and reserve components) on water support and water resupply should be revised based on this concept.

d. Units utilizing lightweight water purifiers may need additional training for field sanitation team members in source detection, disinfection, and testing.

4-3. Leader development. Leader development training must provide for working knowledge of the future doctrine for water support and how it can best be implemented.

4-4. Organizations. Implementing unit distribution of water will impact the mission, organization, equipment, personnel, and doctrinal command/control relationships of current divisional support units. Unit distribution of water to maneuver units will require modifications in personnel composition of current support unit TOEs to support distribution equipment. The personnel quantity and composition will be determined based upon the equipment developed and selected to accomplish this mission. Organizational changes affecting EAD water support units will be addressed separately under the Quartermaster Modularity concept.

4-5. Materiel. This concept will require new and additional equipment to enable improved water distribution methods and increased availability of water to individual soldiers. Additional materiel to equip restructured modular support units may also be required. Enhanced water purification, distribution, packaging, and storage capabilities must continue to be explored.

4-6. Soldiers. This concept will provide improved distribution and increased availability of water to individual soldiers. Soldiers will not be diverted from their normal duties to go to the supply point for water resupply. Packaged water will reduce the need for soldiers in isolated units to account for and transport empty water containers. Lightweight, compact water purification equipment will provide safer, more palatable water for soldiers who are separated from normal supply channels.

Appendix A
References

AR 700-136
Tactical Land Based Water Resources, Management in Contingency Operations

DoD Directive 4705.1
Management of Land-Based Water Resources in Support of Contingency Operations

FM 10-1
Quartermaster Principles

FM 10-52
Water Supply in Theaters of Operation

FM 10-52-1
Water Supply Point Equipment and Operations

FM 10-115
Quartermaster Water Units

FM 10-522
Airdrop of Supplies and Equipment: Rigging Potable Water

FM 21-10
Field Hygiene and Sanitation

FM 21-10-1
Unit Field Sanitation Team

FM 63-1
Support Battalions and Squadrons, Separate Brigades, and Armored Cavalry Regiment

FM 63-2
Division Support Command, Armored, Infantry, and Mechanized Infantry Divisions

FM 63-3J
Combat Service Support Operations-Corps

FM 63-4
Combat Service Support Operations-Theater Army Area Command

FM 63-21
Main Support Battalion

FM 100-5
Operations

FM 100-10
Combat Service Support

TB Med 577
Occupational and Environmental Health: Sanitary Control and Surveillance of Field Water Supplies

TC 8-13
Deployable Medical Systems-Tactics, Techniques, and Procedures

TRADOC Reg 11-16
Development and Management of Operational Concepts

Glossary

Section I
Abbreviations

ARTEP	Army Training and Evaluation Program
BSA	Brigade Support Area
COMMZ	Communications Zone
CSS	Combat Service Support
DS	direct support
EAC	echelons above corps
EAD	echelons above division
FAWPSS	Forward Area Water Point Supply System
FMTV	Family of Medium Tactical Vehicles
GS	general support
LOGPAC	Logistics Package
LRP	Logistics Release Point
LWPS	Lightweight Water Purification System
MTP	Mission Training Plan
OOTW	operations other than war

OTSG	Office of the Surgeon General
PLS	Palletized Loading System
POI	Program of Instruction
PWS/DS	Potable Water Storage/Distribution System
QM	Quartermaster
ROWPU Unit	Reverse Osmosis Water Purification
SMFT	Semitrailer Mounted Fabric Tank
TOE	Table of Organization and Equipment
TRADOC	U.S. Army Training and Doctrine Command
TTP	tactics, techniques, and procedures
TWDS	Tactical Water Distribution System
USACASCOM `	U.S. Army Combined Arms Support Command

Section II
Terms

Cache
Supplies left at a pre-determined location for units to use as needed.

Department of the Army's Pool of Assets
Items in operational stocks and Common Table of Allowance stocks in depots.

Logistics package
Supplies, personnel, and mail transported from the maneuver unit field trains under the supervision of the unit support platoon or company supply sergeant to a LRP where it is delivered to the company.

Logistics preparation of the theater
Those actions (force structure, resources, and strategic lift) taken to reduce the cost of logistically supporting an operations plan or a contingency plan. Logistics preparation of the theater minimizes or eliminates potential problems during deployment, at the outbreak of hostilities, and throughout the campaign. It is a systematic tool used by logisticians and commanders to complete their mission. It becomes the basis for deciding where, when, and how to deploy limited resources—supplies, equipment, and people.

Logistics release point
A forward-located, pre-arranged rendezvous point where supporters and their customers meet for logistics operations.

Maneuver units
The term "maneuver units" when used in this concept refers to combat units and the combat support units which maneuver with them.

Non-potable water
Water that has not been examined, properly treated, and approved by the appropriate authorities as being safe for human consumption.

Packaged water
Water stored, transported, and issued in expendable containers.

Potable water
Water that is free from disease-producing organisms, poisonous substances, and chemical or biological agents and radioactive contaminants which make it unfit for human consumption and many other uses.

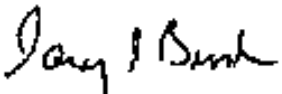
Supply point distribution
Units must go to the location of the support element to be issued supplies.

Unit distribution
Supplies are delivered to LRPs and/or supported units' trains for inclusion in LOGPACs.

FOR THE COMMANDER:

OFFICIAL:

JAMES J. CRAVENS JR.
Major General, GS
Chief of Staff



GARY E. BUSHOVER
Colonel, GS
Deputy Chief of Staff
for Information Management

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